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CIMITIEDI, VII ZOISS				2661	
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Please find below and/or attached an Office communication concerning this application or proceeding.

		· //					
		Application No.	Applicant(s)				
		09/745,345	CHOI, MYUNG SOON				
	Office Action Summary	Examiner	Art Unit				
		Joshua Kading	2661				
Period f	The MAILING DATE of this communication apports or Reply	pears on the cover sheet with the	correspondence address				
THE - Extended - If the - If NO - Failth	MAILING DATE OF THIS COMMUNICATION.  ensions of time may be available under the provisions of 37 CFR 1.1  r SIX (6) MONTHS from the mailing date of this communication.  e period for reply specified above is less than thirty (30) days, a repl  o period for reply is specified above, the maximum statutory period of the reply within the set or extended period for reply will, by statute treply received by the Office later than three months after the mailing and patent term adjustment. See 37 CFR 1.704(b).	36(a). In no event, however, may a reply be to within the statutory minimum of thirty (30) downleading and will expire SIX (6) MONTHS from the application to become ABANDON	timely filed  ays will be considered timely.  m the mailing date of this communication.  IED (35 U.S.C. § 133).				
Status	,						
1)[	Responsive to communication(s) filed on <u>15 N</u>	lovember 2004					
2a)□		s action is non-final.					
3)	·		rosecution as to the merits is				
٥/ك	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.						
Disposit	tion of Claims						
4)⊠	Claim(s) <u>1-7,9-12 and 14-22</u> is/are pending in	the application.					
- /	4a) Of the above claim(s) is/are withdra						
5)□	Claim(s) is/are allowed.						
6)🖂							
7)🖂	Claim(s) 1 is/are objected to.						
· —	Claim(s) are subject to restriction and/o	r election requirement.					
Applicat	tion Papers						
9)[	The specification is objected to by the Examine	er.					
•	The drawing(s) filed on is/are: a) acc		Examiner.				
•—	Applicant may not request that any objection to the						
	Replacement drawing sheet(s) including the correct	tion is required if the drawing(s) is o	bjected to. See 37 CFR 1.121(d).				
11)	The oath or declaration is objected to by the Ex						
Priority	under 35 U.S.C. § 119						
a)	Acknowledgment is made of a claim for foreign  All b) Some * c) None of:  1. Certified copies of the priority document  2. Certified copies of the priority document  3. Copies of the certified copies of the priority document  application from the International Bureau  See the attached detailed Office action for a list	s have been received. s have been received in Applica rity documents have been received in Received.	ation No ved in this National Stage				
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	ce of References Cited (PTO-892) ce of Draftsperson's Patent Drawing Review (PTO-948)	4) 🔲 Interview Summar Paper No(s)/Mail I					
3) 🔲 Infor	mation Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	5) 🔲 Notice of Informal	Patent Application (PTO-152)				
Pape	er No(s)/Mail Date	6)					

Art Unit: 2661

#### Page 2

#### **DETAILED ACTION**

### Claim Objections

Claim 1 is objected to because of the following informalities: Claim 1, line 13 states, "identity". This should be changed to --identifying--. Appropriate correction is required.

#### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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Claims 1, 5-7, 9, and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA) in view of Östman et al. (U.S. Patent 6,483,838 B1).

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Regarding claim 1, AAPA discloses "an ATM (Asynchronous Transfer Mode) cell transmitting device of an ATM switching system comprising:

a time slot input unit for switching a plurality of time slots (figure 1, element 1);

a packet processing unit for forming a packet using data corresponding to the switched time slots (figure 1, element 2; specification, page 1, lines 15-17);

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a CAM (Contents Addressable Memory) for receiving header information of the... packet and outputting an ATM buffer number (figure 1, element 8 where VPI/VCI are header information);

an ATM cell transmitting unit for storing the data of the...packet outputted from the packet processing unit according to the ATM buffer number outputted from the CAM, to form an ATM cell (figure 1, element 9); and

a controlling unit for performing a general controlling operation (figure 1, element 5),

wherein the CAM allocates a same ATM buffer number to include different time slots...in the same ATM buffer number (specification, page 1, lines 22-page 3, lines 1-4 where there are 256 time slots used to create the ATM cell that uses the same ATM buffer number from the CAM)."

However, AAPA lacks what Östman discloses, the packet is a "CPS" packet (figure 2 and figure 3 where figure 3 shows CPS packets being assembled into an ATM packet) and wherein the CAM further allocates "CIDs for identifying a plurality of users in a single VC in the same ATM buffer number (figure 2, where the each individual CPS packet has a CID portion in the header and as further described in col. 3, lines 44-49)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the CPS packet and CIDs with the rest of the ATM device for the purpose of multiplexing a plurality of users into one ATM channel (Östman, col. 2, lines 35-44). The motivation being that by multiplexing a plurality of users the overall throughput of the network is increased.

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Regarding claim 5, AAPA and Östman disclose the device of claim 1. AAPA lacks "the header information of the CPS packet refers to a time slot number and a channel identifier (CID)." However, Östman further discloses "the header information of the CPS packet refers to a time slot number and a channel identifier (CID) (figure 2, where the header clearly contains a CID or channel identifier)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the CID with the device of claim 1 for the same reasons and motivation as in claim 1.

Regarding claim 6, AAPA and Östman disclose the device of claim 1. Östman lacks "a time switch for switching the plurality of time slots; an input buffer unit for storing the data corresponding to the plurality of time slots outputted from the time switch..." However, AAPA further discloses "a time switch for switching a plurality of time slots (figure 1, element 1); an input buffer unit for storing the plurality of time slot data outputted from the time switch (figure 1, element 3)..." AAPA however, lacks "a multiplexer for selectively outputting the time slot data stored in the input to buffer unit." Although AAPA lacks the multiplexer, Östman further discloses "a multiplexer for selectively outputting the time slot data stored in the input to buffer unit (col. 2, lines 35-44 where the act of multiplexing is done by a multiplexer)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the time switch, the buffer, and the multiplexer with the device of claim 1 for the same reasons and motivation as in claim 1.

Regarding claims 7 and 12, AAPA and Östman disclose the device of claim 1. Östman lacks "a packet header storing unit for receiving a CPS packet header by time slot from the controlling unit and storing the same; and a CPS packet buffer for storing the CPS packet header outputted from the packet header storing unit and the time slot data outputted from the multiplexer, to form a CPS packet." However, AAPA discloses "a packet header storing unit for receiving a CPS packet header by time slot from the controlling unit and storing the same (figure 1, element 8; specification, page 3, lines 9-13); and a CPS packet buffer for storing the CPS packet header outputted from the packet header storing unit and the time slot data outputted from the multiplexer, to form a CPS packet (figure 1, element 6; specification, page 3, lines 14-16)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the packet header storing unit and the CPS packet buffer with the device of claim 1 for the same reasons and motivation as in claim 1.

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Regarding claim 9, AAPA and Östman disclose the device of claim 1. Östman lacks "an ATM buffer unit for storing the CPS packet data outputted from the packet processing unit in a plurality of ATM buffers according to the ATM buffer number of the CAM; an ATM header generating unit for storing an ATM header; and a transmitting buffer for combining the outputs of the ATM buffer unit and 5 of the ATM header generating unit, to form an ATM cell." However, AAPA further discloses "an ATM buffer unit for storing the CPS packet data outputted from the packet processing unit in a

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plurality of ATM buffers according to the ATM buffer number of the CAM (figure 1, element 6; specification, page 3, lines 14-16); an ATM header generating unit for storing an ATM header (figure 1, element 8; specification, page 3, lines 9-13); and a transmitting buffer for combining the outputs of the ATM buffer unit and 5 of the ATM header generating unit, to form an ATM cell (figure 1, element 9)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the ATM buffer, the ATM header generating unit, and transmitting buffer with the device of claim 1 for the same reasons and motivation as in claim 1.

Regarding claim 16, AAPA discloses "an ATM (Asynchronous Transfer Mode) cell transmitting device of a switching system comprising:

an ATM cell receiving unit for extracting a...packet from a received ATM cell and storing it according to an ATM buffer number (figure 1, elements 1 and 2);

a packet processing unit for converting header information of the extracted...packet and the ATM buffer number outputted from the ATM cell receiving unit into a time slot number and storing a payload of the...packet according to the time slot number (figure 1, element 7);

a time slot output unit for demultiplexing the payload of the CPS packet outputted from the packet processing unit to a plurality of time slots and outputting the same (figure 1, elements 1 and 2; specification, page 1, lines 15-17),

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wherein a single ATM buffer number includes multiple time slot numbers (specification, page 1, lines 22-page 3, lines 1-4 where there are 256 time slots used to create the ATM cell that uses the same ATM buffer number from the CAM)."

However, AAPA lacks what Östman discloses, the "CPS" packet (figure 2 and figure 3 where figure 3 shows CPS packets being assembled into an ATM packet) and wherein the single ATM buffer number further includes "CIDs for identifying a plurality of users in a single VC (figure 2, where the each individual CPS packet has a CID portion in the header and as further described in col. 3, lines 44-49)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the CPS packet and the CIDs with the rest of the ATM device for the purpose of multiplexing a plurality of users into one ATM channel (Östman, col. 2, lines 35-44). The motivation being that by multiplexing a plurality of users the overall throughput of the network is increased.

Regarding claim 17, AAPA and Östman disclose the device of claim 16. AAPA lacks "the header information of the CPS packet refers to a time slot number and a channel identifier (CID)." However, Östman further discloses "the header information of the CPS packet refers to a time slot number and a channel identifier (CID) (figure 2, where the header clearly contains a CID or channel identifier)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the CID with the device of claim 16 for the same reasons and motivation as in claim 16.

Regarding claim 18, AAPA and Östman disclose the device of claim 16. Östman lacks "the ATM buffer number is determined by the VPI/VCI included in the header of the ATM cell." However, AAPA further discloses "the ATM buffer number is determined by the VPI/VCI included in the header of the ATM cell (figure 1, the path between elements 7 and 8 shows the slot number and VPI/VCI; specification, page 1, lines 22-25 where the time slot number corresponds to the ATM buffer number)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the ATM buffer number being determined by the VPI/VCI with the device of claim 16 for the same reasons and motivation as in claim 16.

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Regarding claim 19, AAPA and Östman disclose the device of claim 16. Östman lacks "a receiving buffer for storing the ATM cell received through the ATM network; a cell segmenting unit for reading the ATM cell from the receiving buffer, extracting a CPS packet and outputting VPI/VCI information of the ATM cell header; a first CAM for outputting an ATM buffer number corresponding to the output VPI/VCI of the cell segmenting unit; and an ATM buffer unit for storing the CPS packet outputted from the cell segmenting unit according to the ATM buffer number outputted from the first CAM."

However, AAPA further discloses "a receiving buffer for storing the ATM cell received through the ATM network (figure 1, element 9; specification, page 2, lines 4-7); a cell segmenting unit for reading the ATM cell from the receiving buffer, extracting a CPS packet and outputting VPI/VCI information of the ATM cell header (figure 1, element 2; specification, page 1, lines 14-17); a first CAM for outputting an ATM buffer

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number corresponding to the output VPI/VCI of the cell segmenting unit (figure 1, element 8; specification, page 1, lines 22-25); and an ATM buffer unit for storing the CPS packet outputted from the cell segmenting unit according to the ATM buffer number outputted from the first CAM (figure 1, element 6; specification, page 2, lines 4-5)."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the receiving buffer, the cell segmenter, the CAM, and another ATM buffer with the device of claim 16 for the same reasons and motivation as in claim 16.

Regarding claim 20, AAPA and Östman disclose the device of claim 19. Östman lacks "the ATM buffer unit having a small capacity of N number of ATM buffers, for outputting an ATM buffer number and the channel identifier of the CPS packet header to the packet processing unit as the CPS packet is wholly completed." However, AAPA further discloses "the ATM buffer unit having a small capacity of N number of ATM buffers, for outputting an ATM buffer number and the channel identifier of the CPS packet header to the packet processing unit as the CPS packet is wholly completed (figure 1, elements 7 and 8; specification, page 2, lines 24-25 and page 3, line 1; it should also be noted the size of the buffer is of a capacity N where N is the size of the buffer)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the buffer with the device of claim 19 for the same reasons and motivation as in claim 19.

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Regarding claim 21, as it is understood at this time, AAPA and Östman disclose the device of claim 16. Östman lacks "a second CAM for outputting a time slot number corresponding to the ATM buffer number inputted from the ATM receiving unit; and a CPS packet buffer unit for storing the CPS packet payload outputted from the ATM receiving unit according to the time slot number outputted from the second CAM."

However, AAPA further discloses "a second CAM for outputting a time slot number corresponding to the ATM buffer number inputted from the ATM receiving unit (figure 1, element 8; specification, page 2, lines 22-25 and page 3, lines 1-4); and a CPS packet buffer unit for storing the CPS packet payload outputted from the ATM receiving unit according to the time slot number outputted from the second CAM (figure 1, element 6; specification, page 3, lines 14-16)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the CAM with the device of claim 16 for the same reasons and motivation as in claim 16.

Regarding claim 22, AAPA and Östman disclose the device of claim 16. Östman lacks "a demultiplexer for receiving the CPS packet payload from the CPS packet buffer unit and demultiplexing it to a plurality of time slots; an output buffer unit having N number of small capacity of buffers, for storing the time slot data demultiplexed by the demultiplexer; and a time switch for switching the plurality of time slots stored in the output buffer unit." However, AAPA further discloses "a demultiplexer for receiving the CPS packet payload from the CPS packet buffer unit and demultiplexing it to a plurality of time slots (figure 1, element 2; specification, page 1, lines 14-17 where by

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segmentation the ATM cell into a plurality of time slots is the functional equivalent of demultiplexing the packet); an output buffer unit having N number of small capacity of buffers, for storing the time slot data demultiplexed by the demultiplexer (figure 1, element 6; specification, page 2, lines 4-5); and a time switch for switching the plurality of time slots stored in the output buffer unit (figure 1, element 1)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the demultiplexer, buffer, and the switch with the device of claim 16 for the same reasons and motivation as in claim 16.

Claims 2-4, 10-12, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA and Östman et al. as applied to claim 1 above (for claims 2-4 only), and further in view of Stacey et al. (U.S. Patent 6,434,154 B1).

Regarding claim 2, AAPA and Östman disclose the device of claim 1. AAPA and Östman lack "a timer for setting an ATM cell transmitting time of the ATM cell transmitting unit." However, Stacey discloses "a timer for setting an ATM cell transmitting time of the ATM cell transmitting unit (figure 7 where the "Upstream TDMA mini-slots" are the same as having a "timer" for each ATM cell, that is to say in a TDMA stream, each cell gets a certain amount of time per cycle, i.e. each cell is timed each cycle)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the timing of each cell with the device of claim 1 for the purpose of

Art Unit: 2661

Page 12

transmitting a plurality of data from different users. The motivation being to reduce the overall packet transmission delay (Stacey, col. 3, lines 38-42).

Regarding claim 3, AAPA, Östman, and Stacey disclose the device of claim 2.

AAPA and Östman lack "the ATM cell transmitting unit receives a CPS packet data and an ATM header for a predetermined time as set in the timer arid outputs an ATM cell."

However, Stacey further discloses "the ATM cell transmitting unit receives a CPS packet data and an ATM header for a predetermined time as set in the timer arid outputs an ATM cell (figure 7 where the "Upstream TDMA mini-slots" are the same as having a "timer" for each ATM cell, that is to say in a TDMA stream, each cell gets a certain amount of time per cycle during the transmission and receiving of data, i.e. each cell is timed each cycle)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the timing with the device of claim 2 for the same reasons and motivation as in claim 2.

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Regarding claim 4, AAPA, Östman, and Stacey disclose the device of claim 3.

AAPA and Stacey lack "the ATM cell transmitting unit sets CPS packet data which is not received yet as '0' and completes an ATM cell, in case that CPS packet data is not wholly received for a predetermined time as set in the timer." However, Östman discloses "the ATM cell transmitting unit sets CPS packet data which is not received yet as '0' and completes an ATM cell, in case that CPS packet data is not wholly received for a predetermined time as set in the timer (figure 3, element 28 where padding

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achieves the same goal as inserting '0s' into the ATM cell, i.e. if the CPS packet is not big enough to fill the ATM cell, the ATM cell must having padding or in applicant's case '0s' used to fill the rest of the cell)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the '0s' with the device of claim 3 for the same reasons and motivation as in claim 3.

Regarding claim 10, AAPA discloses "an ATM (Asynchronous Transfer Mode) cell transmitting device comprising:

a time slot input unit for switching a plurality of time slots (figure 1, element 1); a packet processing unit for receiving data corresponding to the switched time slots and forming a...packet (figure 1, element 2; specification, page 1, lines 15-17);

a CAM (Contents Addressable Memory) for outputting ATM buffer numbers for the time slots and a CID (Channel Identifier) inputted from the packet processing unit (figure 1, element 8 where VPI/VCI are header information);

an ATM transmitting unit for storing the data of the...packet outputted from the packet processing unit according to the ATM buffer number outputted is from the CAM, to form an ATM cell (figure 1, element 9);

a controlling unit for performing a general controlling operation (figure 1, element 5),

wherein the CAM includes a look-up table having different time slot numbers...allocated to a same ATM buffer number such that a plurality of time slots are multiplexed in the same ATM buffer number (specification, page 1, lines 22-page 3,

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lines 1-4 where there are 256 time slots used to create the ATM cell that uses the same ATM buffer number from the CAM)."

However, AAPA lacks what Östman discloses, the "CPS" packets (figure 2 and figure 3 where figure 3 shows CPS packets being assembled into an ATM packet) and wherein the CAM further allocates "CIDs for identifying a plurality of users in a single VC (figure 2, where the each individual CPS packet has a CID portion in the header and as further described in col. 3, lines 44-49)."

AAPA and Östman however, further lack what Stacey discloses, "a timer for setting an ATM cell transmitting time of the ATM cell transmitting unit (figure 7 where the "Upstream TDMA mini-slots" are the same as having a "timer" for each ATM cell, that is to say in a TDMA stream, each cell gets a certain amount of time per cycle, i.e. each cell is timed each cycle)..."

It would have been obvious to one with ordinary skill in the art at the time of invention to include the CPS packets, the CIDS, and the timer with the rest of the device for the purpose of multiplexing a plurality of users into one ATM channel (Östman, col. 2, lines 35-44). The motivation being that by multiplexing a plurality of users using a timer, the overall packet transmission delay is reduced (Stacey, col. 3, lines 38-42).

Regarding claim 11, AAPA, Östman, and Stacey disclose the device of claim 10.

Östman and Stacey lack "a time switch for switching a plurality of time slots; an input buffer unit for storing the plurality of time slot data outputted from the time switch..."

However, AAPA further discloses "a time switch for switching a plurality of time slots

(figure 1, element 1); an input buffer unit for storing the plurality of time slot data outputted from the time switch (figure 1, element 3)..." AAPA however, lacks "a multiplexer for selectively outputting the time slot data stored in the input to buffer unit." Although AAPA lacks the multiplexer, Östman further discloses "a multiplexer for selectively outputting the time slot data stored in the input to buffer unit (col. 2, lines 35-44 where the act of multiplexing is done by a multiplexer)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the time switch, the buffer, and the multiplexer with the device of claim 10 for the same reasons and motivation as in claim 10.

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Regarding claim 14, AAPA, Östman, and Stacey disclose the device of claim 10. AAPA and Stacey lack "the ATM cell transmitting unit sets CPS packet data which is not received vet as '0' and completes an ATM cell, in case that CPS packet data is not wholly received for a predetermined time as set in the timer." However, Östman discloses "the ATM cell transmitting unit sets CPS packet data which is not received yet as '0' and completes an ATM cell, in case that CPS packet data is not wholly received for a predetermined time as set in the timer (figure 3, element 28 where padding achieves the same goal as inserting '0s' into the ATM cell, i.e. if the CPS packet is not big enough to fill the ATM cell, the ATM cell must having padding or in applicant's case '0s' used to fill the rest of the cell)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the '0s' with the device of claim 10 for the same reasons and motivation as in claim 10.

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Regarding claim 15, AAPA, Östman, and Stacey disclose the device of claim 10. Östman and Stacey lack "an ATM buffer unit for storing the CPS packet data outputted from the packet processing unit in a plurality of ATM buffers according to the ATM buffer number of the CAM; an ATM header generating unit for storing an ATM header; and a transmitting buffer for combining the outputs of the ATM buffer unit and 5 of the ATM header generating unit, to form an ATM cell." However, AAPA further discloses "an ATM buffer unit for storing the CPS packet data outputted from the packet processing unit in a plurality of ATM buffers according to the ATM buffer number of the CAM (figure 1, element 6; specification, page 3, lines 14-16); an ATM header generating unit for storing an ATM header (figure 1, element 8; specification, page 3, lines 9-13); and a transmitting buffer for combining the outputs of the ATM buffer unit and 5 of the ATM header generating unit, to form an ATM cell (figure 1, element 9)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the ATM buffer, the ATM header generating unit, and transmitting buffer with the device of claim 10 for the same reasons and motivation as in claim 10.

## Response to Arguments

Applicant's arguments, see REMARKS, page 12, paragraph 5, filed 15

November 2004, with respect to the objections of claims 7 and 16 have been fully considered and are persuasive. The objections of claims 7 and 16 have been withdrawn.

Art Unit: 2661

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Applicant's arguments, see REMARKS, page 13, paragraph 1, filed 15

November 2004, with respect to the objection to the claim of foreign priority has been fully considered and is persuasive. The objection to the claim of foreign priority has been withdrawn.

Page 17

Applicant's arguments with respect to claims 1-7, 9-12, and 14-22 have been considered but are most in view of the new ground(s) of rejection.

10 Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (571) 272-3070. The examiner can normally be reached on M-F: 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2661

Page 18

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Joshua Kading Examiner

Art Unit 2661

10 March 21, 2005

BOB PHUNKULH PRIMARY EXAMINER